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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/072,784	05/06/1998	BARIN GEOFFRY HASKELL		6905

7590 06/13/2003
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EXAMINER

CHEN, WENPENG

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 06/13/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/072,784

Applicant(s)

HASKELL ET AL.

Examiner

Wenpeng Chen

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-28, 31-33 and 36-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29, 30, 34, 35 and 39-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/24/2003 has been entered.

Examiner's remarks

2. The notice of appeal, which is filed on 4/25/2003 and has been recorded as paper #31, is improper because the application is not under a rejected status. If the Applicants wish to appeal after the first Office action, a new notice of appeal must be filed.

3. Claims 36-38 has been cancelled in Applicants' response received on 3/5/2002.

Examiner's responses to Applicant's remark

4. Applicants' arguments filed on 3/23/2003 have been fully considered. Applicant's arguments, see paper #30, filed 3/23/2003, with respect to the rejection(s) of all claims have been fully considered and are persuasive. Therefore, the rejection with the original reason has been withdrawn.

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The Applicants argued that the video_object_layer_id cited in Suzuki et al. (US patent 6,097,842) does not carry the property of "priority". The Examiner agrees with the conclusion. In the previous Office Action, the Examiner read "video_object_layer_id" as "priority" recited in Claim 29. After careful evaluation, the Examiner concluded that the video_object_layer_id is silent about the commonly known meaning of "priority" and therefore cannot be read as a VOL priority as pointed out by the Applicants.

However, upon further consideration, a new ground(s) of rejection based on new interpretation of Suzuki patent is given below.

5. The Examiner thanks the Applicants for pointing out typos in paper #23. As correctly pointed out by the Applicants, the following corrections shall be made.

- a. All the term "Claim 39" in paragraph 2, paper #23 shall be replaced with "Claim 29".
- b. Claims 39 and 40 shall be replaced with Claims 29 and 30, respectively.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (US patent 6,097,842 cited previously.)

For Claim 29, Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

- identifying a video object (VO) from a video data; (Fig. 32)
- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)
- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)
- assigning priorities to video object layers (VOL); (*column 30, lines 62-63; column 31, lines 42-46; The one-bit flag for scalability is assigned to each layer as lower layer or upper layer. When there are only two VOLs, the flag carries priority information. The cited passages are related to MPEG4VM which is Exhibit D, ISO/IEC JTC1/SC29/WG11 N1277 attached to the Applicants Declaration received 2/24/2003, paper #26. As shown in ISO/IEC JTC1/SC29/WG11 N1277, pages 45-50, the base layer that is the lower layer has the high priority because in the decoding process merely data of an enhancement layer cannot be used to generate any meaningful image.*)
- transmitting each VOL by: (1) transmitting an identifier of the VOL's priority and (2) transmitting VOPs of the VOL. (*column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)*

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of ISO/IEC JTC1/SC29/WG11 N1993 publication ("Coding of Moving Pictures and Audio," ISO/IEC JTC1/SC29/WG11 N1993, San Jose, February 1998; hereafter referred as ISO/IEC N1993.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

- identifying a video object (VO) from a video data; (Fig. 32)
- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)
- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)
- transmitting each VOL by: (1) transmitting an identifier of the VOL and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

However, Suzuki does not teach the identifier recited in Claim 30.

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ISO/IEC N1993 teaches an identifier including:

-- a flag, having a length of one bit that, when set to "1" indicates that priority is specified for the VOL; (pages 3 and 13; The "is_visual_object_identifier" is the flag.)

-- a field, having a length of three bits, taking value between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority. (pages 3 and 13; The "video_object_layer_priority" is the field.)

It is desirable to have more flexibility in adjusting scalability with including object base scalability. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Suzuki's VOL syntax shown in Fig. 35 with Table 7.2.4 of ISO/IEC N1993 to include the above flag and field in the identifier, because the combination provides more flexibility in scalability. The combination thus transmits an identifier of the VOL's priority.

10. Claims 34, 39-41, and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of Chang et al. (US patent 6,025,877 cited previously.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

- identifying a video object (VO) from a video data; (Fig. 32)
- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)
- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)

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-- assigning priorities to video object layers (VOL); (*column 30, lines 62-63; column 31, lines 42-46; The one-bit flag for scalability is assigned to each layer as lower layer or upper layer. When there are only two VOLs, the flag carries priority information. The cited passages are related to MPEG4VM which is Exhibit D, ISO/IEC JTC1/SC29/WG11 N1277 attached to the Applicants Declaration received 2/24/2003, paper #26. As shown in ISO/IEC JTC1/SC29/WG11 N1277, pages 45-50, the base layer that is the lower layer has the high priority because in the decoding process merely data of an enhancement layer cannot be used to generate any meaningful image.*)

-- adding priority data for each video object layer to the video streams; (*column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)*

-- transmitting each VOL by: (1) transmitting an identifier of the VOL's priority and (2) transmitting VOPs of the VOL. (*column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)*

However, Suzuki does not teach the transmitting step recited in Claims 34 and 39.

Chang teaches a method of encoding a video data stream comprising the steps of:

-- assigning a priority to VOL data for the case there is only one single VOL of each video object; (Fig. 2, element 21; column 3, lines 10-26)

-- wherein information related to the single VOL data having a high priority is transmitted before information related to VOL data having a low priority; (column 3, lines 57-67)

-- (a) the priority data identifies which VOL layer may be discarded in the event of (a1) limited memory or processor resources, (a2) channel errors and (b) determining whether transmission conditions permit transmission of all VOLs of the video object; (column 3, lines 32-40, 58-64; Fig. 5; Fig. 5 teaches to transmit parts of information according to the priority and according to various conditions. A low current transmission speed is an indicator of channel congestion that causes channel error. The transmission speed in a network assigned to the system is varied. When the speed is reduced, the channel bandwidth is lost. It is also representing a limitation to the overall process resource of the receiving part.)

- if, not, discarding a lowest priority VOL and transmitting remaining VOL data. (As shown in Fig. 5, Chang teaches a case that the $(TxSetSize + ObjSize(\text{lowest priority}))$ becomes larger than egs . In that case the lowest priority VOL is discarded.)

It is desirable to maintain high quality of video services of various transmission speeds. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Chang's teaching to transmit Suzuki's VOLs and priority data to a decoder according to the assigned the identification of base layer or enhancement layer (that represents priority of each VOL in cases of two VOLs) of Suzuki, because the combination provides scalable transmission to minimize the effect variable transmission speed for optimizing the quality of transmitted data.

For Claim 44, both Suzuki and Chang teach a method of decoding encoded video data stream generated in their respective coding method. (Fig. 2 of Chang; Fig. 27 of Suzuki) As discussed above, the priority data identifies which VOL layer may be discarded in the event of limited memory or processor resources in the coding process, the combination also meets the limitation of the method of decoding recited in Claim 44.

11. Claims 34-35 and 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of ISO/IEC N1993 cited above and Chang et al. (US patent 6,025,877 cited previously.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

- identifying a video object (VO) from a video data; (Fig. 32)
- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)
- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)
- transmitting each VOL by: (1) transmitting an identifier of the VOL and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The one-bit flag scalability is transmitted.)

However, Suzuki does not teach the identifier interpreted as that recited in Claim 35.

ISO/IEC N1993 teaches:

- adding priority data for each video object layer to the video streams; (pages 3 and 13)
- an identifier including a flag, having a length of one bit that, when set to "1" indicates that priority is specified for the VOL; (pages 3 and 13; The "is_visual_object_identifier" is the flag.)
- wherein the indication of the priority of the VOL is optional; (The one-bit "is_visual_object_identifier" flag indicates whether priority is set or not.)

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-- an identifier including a field, having a length of three bits, taking value between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority. (pages 3 and 13; The "video_object_layer_priority" is the field.)

It is desirable to have more flexibility in adjusting scalability with a method including object base scalability. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Suzuki's VOL syntax shown in Fig. 35 with Table 7.2.4 of ISO/IEC N1993 to include the above flag and field in the identifier, because the combination provides more flexibility in scalability. The combination thus transmits an identifier of the VOL's priority.

However, the combination of Suzuki and ISO/IEC N1993 does not teach the transmitting step recited in Claims 34 and 39.

Chang teaches a method of encoding a video data stream comprising the steps of:

-- assigning a priority to VOL data for the case there is only one single VOL of each video object; (Fig. 2, element 21; column 3, lines 10-26)

-- wherein information related to the single VOL data having a high priority is transmitted before information related to VOL data having a low priority; (column 3, lines 57-67)

-- (a) the priority data identifies which VOL layer may be discarded in the event of (a1) limited memory or processor resources, (a2) channel errors and (b) determining whether transmission conditions permit transmission of all VOLs of the video object; (column 3, lines 32-40, 58-64; Fig. 5; Fig. 5 teaches to transmit parts of information according to the priority and according to various conditions. A low current transmission speed is an indicator of channel congestion that causes channel error. The transmission speed in a network assigned to the system

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is varied. When the speed is reduced, the channel bandwidth is lost. It is also representing a limitation to the overall process resource of the receiving part.)

- if, not, discarding a lowest priority VOL and transmitting remaining VOL data. (

As shown in Fig. 5, Chang teaches a case that the $(TxSetSize + ObjSize(\text{lowest priority}))$ becomes larger than egs. In that case the lowest priority VOL is discarded.)

It is desirable to maintain high quality of video services of various transmission speeds. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Chang's teaching to transmit VOLs and priority data taught by the combination of Suzuki and ISO/IEC N1993 to a decoder according to the assigned priority associated with the identifier because the combination provides scalable transmission to minimize the effect variable transmission speed for optimizing the quality of transmitted data.

For Claim 44, both Suzuki and Chang teach a method of decoding encoded video data stream generated in their respective coding method. (Fig. 2 of Chang; Fig. 27 of Suzuki) As discussed above, the priority data identifies which VOL layer may be discarded in the event of limited memory or processor resources in the coding process, the overall combination also meets the limitation of the method of decoding recited in Claim 44.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Wenpeng Chen
Primary Examiner
Art Unit 2624

June 5, 2003

